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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/086,643	03/04/2002	Evgeny Frumker	FRUMKER=1	6968

1444 7590 10/26/2004

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EXAMINER

PYO, KEVIN K

ART UNIT PAPER NUMBER

2878

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/086,643

Applicant(s)

FRUMKER ET AL.

Examiner

Kevin Pyo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 7/72004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 28 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 4-8, 10-12 and 14-27 is/are rejected.
- 7) ☒ Claim(s) 4,9 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/20/02; 8/6/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

1. The Examiner has considered applicant's argument regarding applicant's election with traverse of claims 1-27.

Applicant argues that there is no serious burden on examining different inventions since the fields of search are overlapping. The Examiner disagrees with this argument. The fact that the search for the two inventions overlaps does not necessarily eliminate a serious burden in examining two different inventions.

The requirement is still deemed proper and is therefore made FINAL.

The non-elected claims should be canceled in order to expedite the prosecution.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "additional receiver unit" of claims 15 and 16 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the

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drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 23, the phrase "the sensing surface" of line 1 lacks a proper antecedent basis. It appears that claim 23 should depend on claim 22 in view of providing a proper antecedent basis. The examiner will treat claim 23 as depending on claim 22 in view of expediting the prosecution.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1, 14, 15 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Somerville et al (3,809,480).

Regarding claims 1 and 14, Somerville et al shows in Fig.1 the following elements of applicant's invention: a) a transmitter unit (10, 12, 16, 18, 20) operable to transmit incident radiation with a certain transmitting angle defining a plane of propagation of the incident radiation and with a predetermined angular intensity distribution of the incident radiation (a sheet of light 22 shown in Fig.1 is transmitted with a certain acute angle and certain angular intensity distribution), said region of interest (200) being located within said plane; and b) at least one receiver unit (28, 30) oriented and operable to collect reflections of the incident radiation with a certain solid angle of collection intersecting with said plane (the receiver unit 28, 30 collects reflected radiation with a certain solid angle of collection as shown in Fig.1), a region of intersection being a detecting window (200) of a predetermined geometry containing at least a portion of said region of interest, to detect the collected radiation coming from within said detecting window, and generate data indicative thereof (col.4, lines 53-58).

Regarding claim 15, the limitation therein is shown in Fig.8.

Regarding claim 18, Somerville et al shows in Fig.1 a laser source (10) and a beam shaping element (20). In view of Fig.1, the laser beam from the laser source (10) is collimated and therefore, the laser source (10) should contain a collimating element.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6-8 and 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somerville et al in view of Hinoda et al (4,547,074).

Regarding claims 6-8 and 22-27, Somerville et al et differs from the claimed invention in that it does not disclose the sensing surface of the detector has desirably variable sensitivity distribution. However, Hinoda et al discloses the idea of utilizing the p-n junction photodiodes having different light receiving face areas with interference filters having a plurality of transmission bands formed over the light receiving faces of the photodiodes in view of minimizing the unevenness of light intensity at different locations. It would have been obvious to one of ordinary skill in the art to utilize the teaching of Hinoda et al in the device of Somerville et al in view of minimizing the unevenness of light intensity at different locations. Hinoda et al discloses in col.3, lines 2-3 the n-type silicon substrate (1) is doped with p-type impurities (boron) to form p-type regions (3). Hinoda et al discloses in col.3, lines 19-29 that each of the interference filters (31-34) comprises a transparent dielectric layer (35) and light transmitting metal films (36 and 37), and the interference filters 31-34 differs in the thickness of the dielectric layer (35). The specific scheme used to form the specific pattern would have been obvious to one of ordinary skill in the art in view of the desired performance.

8. Claims 3, 5 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somerville et al in view of the German patent document DE-4406906 (hereinafter REF).

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Regarding claims 3, 5 and 19-21, although Somerville et al does not disclose the use of the recited refractive type beam shaping element for generating a sheet of light. The use of such a beam shaping element is known as shown in REF (Figs.1-3), and it would have been obvious to one of ordinary skill in the art to utilize the beam shaping element (3) of REF in Somerville et al since the specific optics utilized would have been obvious to one of ordinary skill in the art in view of design requirements, the availability of parts, the desired performance, etc. REF shows in Fig.3 two sets of array of facets of the refractive blocks, which are symmetrically identical with respect to a central axis of the refractive block. The specific number of refractive blocks used would have been obvious to one of ordinary skill in the art in view of design requirements.

9. Claims 2, 10-12, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Somerville et al.

Regarding claims 2 and 17, Somerville et al shows in Fig.1 the receiver unit (28, 30) is oriented such that the field of view extends downwards from the horizon. Although the transmitter unit of Somerville et al does not disclose the recited orientation, the specific configuration used to generate a sheet of light (22) would have been obvious to one of ordinary skill in the art in view of design requirements.

Regarding claims 10-12 and 16, it would have been obvious to one of ordinary skill in the art to utilize an additional receiver unit and arrange it in the claimed manner in the device of Somerville et al in view of the desire to improve the accuracy of detection.

***Allowable Subject Matter***

10. Claims 4, 9 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 4, the prior art fails to disclose or make obvious a method for monitoring a region of interest comprising, in addition to the other recited features of the claim, the step of determining the orientation and the length of the surface region in the manner recited in claim 4.

Regarding claims 9 and 13, the prior art fails to disclose or make obvious a method for monitoring a region of interest comprising, in addition to the other recited features of the claim, the details of interaction algorithm as recited in claim 9.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stern (4,643,578) is cited for disclosing a 3-D measurement apparatus.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Pyo whose telephone number is (571) 272-2445. The examiner can normally be reached on Mon-Fri (with flexible hour), First Mon. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin Pyo  
Primary Examiner  
Art Unit 2878

Pkk  
9/11/04